TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

1.1 PURPOSE

The purpose of this Statement of Work (SOW) is to define the work that Northrop Grumman Information Technology ("the Contractor"), will perform for the Project Directors Board for the Montana-wide Interoperability Initiative under the MIS IT Services Contract No. SPB 03-675B, dated 6/15/2003 between Lewis & Clark County on behalf of the Project Directors Board and Northrop Grumman. This SOW incorporates by reference the terms and conditions of said Contract, and in case of any conflict between this SOW and the Contract, the Contract shall prevail.

1.2 BACKGROUND

The majority of Montana's existing public safety voice radio systems rely on 30 year-old technology. These systems represent local, State, and Federal agencies alike. From 1996-1998, working directly with state and local officials, two consulting groups (the Warner Group and Spectrum Resources Inc.) examined the history of the Montana Public Safety Communications Committee (MPSCC) and public safety radio needs in Montana. The studies concluded that development should proceed as a natural outgrowth of existing relationships and processes.

The MPSCC has evolved into the Montana State Interoperability Executive Council (SIEC). Ultimately, the purpose of the SIEC is to provide policy-level direction for matters related to planning, designing and implementing guidelines, best practices, and standard approaches to solve Montana's public safety communications interoperability problems and to leverage any opportunity in support of a Montana-wide system, including seeking Federal funding (or other funding) for Montana-wide interoperability.

The Montana SIEC has endorsed the Montana-wide Public Safety Radio Plan that enables Montana to achieve its' vision of the future. The plan encompasses a partnership among public safety and public service providers, a spectrum plan, the implementation of advanced technologies to include redundancy, and system failure analysis and recovery, and a commitment to long-term maintenance and support.

Implementation of the plan, which addresses the worst case scenario such as Weapon of Mass Destruction (WMD) or other catastrophic events such as a major earthquake or wild land fire, involves the phased build-out across the state. Each of the eight regions is comprised of a consortium of neighboring counties. Eight Consortiums were formed, comprised of neighboring local government and tribal public safety agencies. The SIEC asked the Project Directors of the consortiums to work together to look at an Implementations strategy. A strategy was adopt September 22, 2005 that included the concept of centralized project management.

The Montana Public Safety Services Bureau (PSSB) is providing the support to these incremental projects to verify system compatibility and interoperability on a Montana-wide basis.

1.3 SCOPE

The Contractor shall provide program management services to the Project Directors Board for the coordination of the diverse regional consortia to promote the evolution into a cohesive Montana-wide system in accordance with the Radio System Deployment Strategy and SIEC LAND MOBILE RADIO DEPLOYMENT DEFINITION STATEMENT AND TECHNICAL REQUIREMENTS. The Contractor shall provide all necessary personnel and services toward completion of the tasks defined in Section 3, below.

1.4 PERIOD OF PERFORMANCE

The period of performance for Contractor Program Management Support to the Montana-wide Interoperability Initiative shall be 12/01/2005 through 3/31/2007.

2. APPLICABLE DOCUMENTS

Considerable work has been accomplished by the State, consortia, localities, and regions to define the current systems and the user needs. The following documentation from prior study efforts and current projects will be the basis for this SOW.

2.1 STATE INTEROPERABILITY EXECUTIVE COMMITTEE DOCUMENTS

All State Interoperability Executive Committee documents are located at :

http://discoveringmontana.com/itsd/policy/councils/SIEC/siec.asp

All Project Directors documents are located at:

http://discoveringmontana.com/itsd/policy/councils/SIEC/cdprojects/project_directors/pd.asp

2.2 THE WARNER GROUP REPORTS

1. *State of Montana, Public Safety Communications System Concept Design*, The Warner Group, May 1997 (with appendices).
2. *State of Montana, Public Safety Communications System Concept Design*, Draft Interim Report 1, The Warner Group, July 1996.
3. *State of Montana, Public Safety Communications System Concept Design*, Draft Interim Report 2, The Warner Group, December 1996.

2.3 SPECTRUM RESOURCES INC. REPORTS

1. *Montana Public Safety Communications System, Frequency Plan*, Spectrum Resources, Inc, July 1999.
2. *Final System Design, Montana Public Safety Communications System*, Spectrum Resources, Inc., December 1998 (with appendices).
3. *SIEC Technical Committee Response Memorandum to the SRI Final System Design.*.

2.4 LEWIS & CLARK COUNTY PROJECT DOCUMENTATION

1. *Master Communications Plan, Baseline Needs Assessment*, Draft, Lewis & Clark County/Helena Montana, July 31, 2002 (with appendices, except for Appendix J).

2. *Request for Proposal (RFP)* and *Request for Information (RFI)*, Interoperable Communications System, Lewis and Clark County Sheriffs Office, November 2003.

3. *Motorola Detailed Design Document*, exact reference information to be supplied.

2.5 MISSOULA COUNTY PROJECT DOCUMENTATION

To include all communications plans and studies performed for Missoula County.

2.6 NORTHERN TIER INTEROPERABILITY CONSORTIUM DOCUMENTATION

1. *Deliverable F – NTIP Draft Baseline System Design, Northern Tier Interoperability Project*, Federal Engineering, September 7th, 2004.
2. *Deliverable H – NTIP Estimated Staffing, Cost Estimates and Implementation Schedule,* Federal Engineering, September 14th, 2004.
3. *Deliverable J – NTIP Recommended Implementation Schedule,* Federal Engineering, October 7th, 2004
4. *Deliverable K – NTIP Functional/Technical Requirements Draft,* Federal Engineering, November 4th 2004, Revised November 22nd 2004.
5. To include all project documents and technical design work performed for the Northern Tier Interoperability Project.

2.7 EASTERN TIER INTEROPERABILITY CONSORTIUM DOCUMENTATION

1. *Montana Eastern Tier Interoperability Consortium – Interoperable Communications Plan Project – Needs Assessment,* Northrop Grumman, September 15th, 2005.

2.8 TRI-COUNTY INTEROPERABILITY CONSORTIUM DOCUMENTATION

1. *Tri-County Interoperable Consortium – Interoperable Communications Project – Needs Assessment*, Northrop Grumman, September 30th, 2005.

2.9 CENTRAL MONTANA INTEROPERABLE COMMUNICATION CONSORTIUM DOCUMENTATION

1. *Central Montana Interoperable Communications Consortium – Interoperable Communications Project – Needs Assessment*, Northrop Grumman, October 31st, 2005.

2.10 WESTERN INTEROPERABLE COMMUNICATION CONSORTIUM DOCUMENTATION

To include all needs assessments and requirements analyses performed for the Western Interoperable Communication Consortium.

2.11 SOUTH CENTRAL MONTANA INTEROPERABILITY CONSORTIUM DOCUMENTATION

To include all needs assessments and requirements analyses performed for the South Central Montana Interoperability Consortium.

2.12 I15-90 CONSORTIUM DOCUMENTATION

1. *15-90 Interoperable Communications Consortium Communications System Alternatives and Recommendations*, Federal Engineering, June 3rd 2005.

2.13 BIG SKY 11 CONSORTIUM DOCUMENTATION

To include all needs assessments and requirements analyses performed for the Big Sky 11 Consortium.

3. SCOPE OF WORK

3.1 PROJECT MANAGEMENT AND PLANNING

3.1.1 PROJECT MANAGEMENT AND SUPPORT

The Contractor shall provide a project manager to manage all Contractor activities and deliverables required by this SOW. The Contractor's Project Manager is:

Name: Mark E. Adams
Address: Northrop Grumman
2401 Colonial Drive
City: Helena, Montana
Phone: (406) 443-8694
Fax: (406) 443-8601
Email: Mark.E.Adams@ngc.com

Northrop Grumman proposes to provide Mark E. Adams, or a manager of similar qualifications if Mr. Adams is unavailable, subject to the acceptance of the Project Directors Board, and to staff a Project Management Office.

The Project Directors Board Chairperson is:

Name: Cheryl Liedle, Sheriff Lewis & Clark County
Address: 221 Breckenridge
City: Helena, MT 59601
Phone: (406) 447-8235
Fax: (406) 449-8452
Email: cliedle@co.lewis-clark.mt.us

The Project Directors Board will determine the individual who will function as coordinator, to manage activities in support of this SOW on behalf of the Board.

3.1.2 DEFINE PROJECT OBJECTIVES

The Contractor shall prepare and deliver a list of recommended Systems Objectives. The Contractor shall also prepare and deliver a Project Scope document recommending required system capabilities, geography, and user agencies.

3.1.3 DEVELOP PROJECT PLAN

The Contractor shall prepare and deliver a high-level Montana-wide Interoperability Initiative Project Plan in Contractor format that defines the recommended activities, tentative schedule, responsibilities, and organization for the project Subject approval of the Project Directors.

3.1.4 STATUS REVIEWS

The Contractor shall provide monthly status reports to the Project Directors Board and participate in status meetings with the Project Directors Board following delivery of the status reports.

3.2 DEVELOP MONTANA-WIDE VISION

3.2.1 NEEDS AND REQUIREMENTS ANALYSES

3.2.1.1 Review Existing Needs Assessments and Requirements Analyses

A. The Contractor shall review and assess needs assessments that have been compiled for the NTIP, ETIC, TIC, CMICC, WICC, SCMIC, I15-90 and Big Sky 11 consortiums. The review and assessment shall determine whether the existing tabulations of needs statements are thorough and, if not, identify additional information to be solicited from users of the existing public safety systems in these regions. The review and assessment shall also include dispatch center radio functionality; specifically:
    a. Field unit upgrade strategy
    b. ICS command and control structure
    c. Field unit inventory and needs
B. Mobile and portable coverage needs of local first responders
C. Dispatch radio console functionality requirements
D. Issue affecting narrowbanding Montana-wide by 2013

The Contractor shall review and assess requirements analyses that have been performed for the NTIP, ETIC, TIC, CMICC, WICC, SCMIC, I15-90 and Big Sky 11 consortiums. The review and assessment shall

determine whether the existing requirements analyses are satisfactory or require further development.

3.2.1.2 Perform Additional Interviews and Analyses

To the extent that shortfalls are identified in accordance with the preceding paragraph, the Contractor shall seek or perform additional user interviews and data gathering to provide a comprehensive compilation of user needs. Requirements analyses shall be performed by the Contractor to incorporate newly acquired user need statements into the existing requirements analyses and carry requirements analyses to completion.

Among the most critical information to be gathered are the specific needs for interoperability (e.g., between what parties, frequency of need, duration of interconnection, permanent vs. on-demand support, etc.), local mobile and portable coverage requirements, and dispatch console connectivity (and redundant systems) and Emergency Operation Center (EOC) connectivity. Additional user interviews that may be necessary shall include the collection of data necessary for the preparation of Concepts of Operation (Business Practices, see Paragraph 3.2.6.1, below).

The Contractor shall review the needs and requirements for existing and new partnerships with Federal, State, Tribal and local government services. Those agencies include:

Federal

- Federal Bureau of Investigation
- Bureau of Land Management
- United States Forest Service
- United States Air Force
- Immigration, Customs and Enforcement
- United States Border Patrol
- Bureau of Reclamation
- National Park Service
- United States Marshall Service
- Bonneville Power Administration
- Bureau of Indian Affairs

State of Montana

- Montana Highway Patrol
- Montana Department of Transportation

- Montana Department of Corrections
- Montana Department of Public Health and Human Services
- Montana National Guard
- Montana Department of Natural Resources
- Montana Department of Livestock
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Justice
- University System

Other Entities

- Northwestern Energy Public Utilities
- Railroads
- Hospitals & Emergency Medical Service
- Airports
- Others as needed

The Contractor shall provide composite needs assessment for the eight consortiums in Contractor format for delivery to the Project Directors Board. The delivered needs assessments shall be based on the system objectives previously provided under Paragraph 3.1.2, with any inconsistencies, conflicting data, and/or missing data resolved by the Project Directors Board and Contractor program managers. At the discretion of the Project Directors Board, the approved needs assessment shall be briefed to the community by the Contractor.

3.2.1.3 Perform Requirements Tradeoffs

Under the direction of the Project Directors Board, the Contractor shall prepare an analysis of requirements tradeoffs, taking into account the criticality of requirements, the cost for their implementation, and a phased approach. The analysis shall be governed by the ***SIEC Land Mobile Radio Deployment Definition Statement and Technical Requirements*** document formally adopted by the SIEC, Project Directors Radio System Deployment Strategy and will utilize a cost-benefit analysis that will address existing or planned infrastructure, microwave, and subscriber units. Requirements shall be assigned priorities (e.g., mandatory, desirable, or optional) and requirements selection performed jointly by the Contractor and the Project Directors Board.

3.2.1.4 Prepare System Functional and Performance Requirements Document

The Contractor shall document system functional and performance requirements developed through the activities of the three preceding sections. The System Functional and Performance Requirements shall be in Contractor's preferred format and will include all elements of the Project Directors radio system deployment strategy (field unit, infrastructure and frequencies) dispatch functionality and local 1st responder needs for portable and mobile coverage. The Project Directors Board will review the document and provide written comments to the Contractor. The Contractor shall then revise and deliver a final System Functional and Performance Requirements Document.

3.2.2 DEVELOP TECHNICAL ARCHITECTURE

The technical architecture shall be driven by the System Functional and Performance Requirements (see Paragraph 3.2.1.4), Concept Demonstration Project 1, Concept Demonstration Project 2, and the Mobile Data Terminal project. It's defined as a formulation of a specific architecture that meets those requirements, the existing capital investments of the consortium members and the State, and the stated objectives of the SIEC. This task shall include analyses of existing infrastructure, backbone, and subscriber units. It will also be driven by the ***Radio System Deployment Strategy*** as adopted by the Project Directors Board.

3.2.2.1 Mobile Voice and Data Radio

The Contractor shall develop a preliminary design/architecture of the radio infrastructure for the regional consortia. This shall include design of the backbone, voice radio and, to the extent prescribed by the System Functional and Performance Requirements, data radio building on the existing Mobile Data Terminal plan. The preliminary design shall include provision for the differing needs of the various regions of the state and will incorporate a phased approach as defined in ***Radio System Deployment Strategy***. The interactions of the individual regional voice radio systems among themselves and with the State and Federal agencies shall be addressed. The experience gained from (1) the Lewis & Clark County Interoperable Communications Project and (2) the data radio system implemented by the Mobile Data Terminal project shall be reflected in the model.

The mobile voice and data radio infrastructure preliminary design shall include:

- Standards to be followed
- Basic conceptual tradeoffs, such as trunking versus conventional radio / voted systems and analog versus digital
- Backward compatibility with legacy systems
- Phased approach for build out
- The requirements of heavily populated areas versus rural areas
- Propagation coverage for proposed sites
- Roaming of field units across tower sites and regional boundaries
- Basic Operational Concepts
- Dispatch Center Operations
- Cross-region control concepts
- Radio system management
- Sharing of resources among the regions, with the State, and with Federal agencies
- Security including encryption, authentication, and firewalls
- Scalability for future growth
- Migration paths to future radio system technology
- Levels of failure and recovery
- EOC connectivity
- Dispatch Center (including backup center) connectivity

Cost is a major consideration in the development of the preliminary design. A major focus will be a phased approach targeted at implementing a Montana-wide trunked hybrid system.

3.2.2.2 Backbone Network

The backbone network will consist of the point-to-point communications used to connect the radio tower sites to the corresponding radio control and dispatch facilities. It also provides connectivity between control and dispatch facilities, as required. The latter includes interregional and regional-to-Trunked Master Control Site connectivity. Other transport, as specified by the Project Directors Board (e.g., schools, Department of Transportation Facilities, etc.) will be included in the design.

The backbone network shall be divided into the major trunks and tributaries or spurs from the backbone to individual remote tower sites and, in some cases, control and dispatch facilities. It will also include control station points for tower sites not on the backbone. The Contractor shall provide a preliminary design for the backbone.

Design alternatives to be considered are consortium-built microwave, MDT microwave, Montana National Guard microwave, existing consortium microwave, commercial services, private microwave and private fiber optics links. For the major trunks the Contractor shall perform a loading analysis to determine the capacity required and points of presence. The Contractor shall also design to prevent or protect from loss of service in the event of trunk link failure. Tributaries will be considered to the extent needed to estimate the loading on the backbone.

The preliminary design shall support performance specified by the Mobile Voice and Data Radio design (see paragraph 3.2.2.1 above) and included in the System Functional and Performance Requirements Document. The Contractor shall also validate that the backbone network will support or can be upgraded to support the quality of service required for Voice over IP transport.

3.2.2.3 Field Unit Deployment Strategy

The Contractor will prepare a recommendation based on the ***Radio System Deployment Strategy*** for each consortia. The recommendation will include cost, timeline, and approach to be in compliance with the Incident Command System (ICS). The ultimate goal is to replace outdated subscriber units to narrowband (before 2013) and validate that command and control functions correctly on the Montana-wide system.

3.2.2.4 System Management

System management is typically performed individually for each of the major system components (e.g., voice radio, data radio, backbone network, local and wide-area networks, etc.). The Contractor shall identify the system management needs of all the major components and, if directed by the Project Directors Board, a manager of managers.

3.2.2.5 Radio System Interoperability

The Contractor shall evaluate alternative approaches for providing interoperability among the new regional radio systems and legacy radio systems, as called for in the System Functional and Performance Requirements Document. Various techniques are available for providing interoperability and selection is usually made on a case-by-case basis according specific interoperability needs. Therefore, the Contractor shall identify the appropriate technique for each relevant

interoperability scenario. The interoperability scenarios shall be based on the information produced by the needs assessment and requirements analyses and expressed in the System Functional and Performance Requirements Document. They will specifically include interoperability between P25 trunked, P25 non-trunked, conventional analog repeated, P25 simplex and conventional analog simplex subscriber units. The scenarios shall also consider frequencies available among the consortium agencies.

3.2.2.6 Coordination of Technical Issues

The technical teams from each consortia will assist with the design within their consortia's geographic area, and coordinated along consortia boundaries. Technical issues having ramifications Montana-wide will be addressed by the Project Directors Board Coordination Committee which is made up of representatives from each of the eight consortia technical teams. At the Project Directors Board's discretion, the Coordination Committee shall include additional members from partnering agencies. The Contractor will coordinate activities of the Coordination Committee. Additionally, the Contractor will develop a uniform approach to tailoring the Motorola R-56 Standard to the Project Directors Board's needs.

3.2.2.7 Present Preliminary Design to Project Directors Board and Regional Consortia

The Contractor shall deliver a draft of the Preliminary Design to the Project Directors Board and Coordination Committee and brief its content. Both will review the draft document and provide comments to the Contractor. The Contractor shall then revise and deliver a final Preliminary Design Document. At the Project Directors Board's discretion, the Contractor shall brief regional consortia.

3.2.3 DEVELOP TECHNICAL REQUIREMENTS

The Contractor shall develop technical requirements based on the Conceptual Design/Architecture developed in accordance with the ***SIEC Land Mobile Radio Deployment Definition Statement and Technical Requirements*** document identified in Paragraph 3.2.1.3. The technical requirements shall include the specification of the standards to be imposed in the implementation of the Montana-wide Interoperability Initiative.

The Contractor shall deliver a draft of the Technical Requirements Document to the Project Directors Board. The Project Directors Board

will review the draft document and provide written comments to the Contractor. The Contractor shall then revise and deliver a final Technical Requirements Document.

3.2.4 DEVELOP SCHEDULES

The Contractor shall develop an overall schedule for the build-out of the Montana-wide Interoperability Initiative throughout the eight consortia. The schedule will reflect a phased approach with the understanding that each phase is driven by available funding. Therefore, the schedules are regarded as goals for planning, rather than firm milestones.

The schedule shall identify significant activities, including those of the Project Directors Board, for implementation of each of the regional interoperability projects. Dependences among tasks shall be determined and appropriate linkages programmed into the schedule.

3.2.5 OTHER ISSUES

3.2.5.1 Operations and Maintenance Cost Management

The Contract shall support the Project Directors Board in establishing cost management policies for both operation and maintenance of the system. This shall include cost tracking and be included in the System Management Plan specified in Paragraph 3.2.6.7.

3.2.6 DEVELOP DOCUMENTATION AND PROJECT PLANS

3.2.6.1 Concept of Operations (Business Practices)

The Contractor shall prepare a concept of operations document for the eight consortiums. Data collected as a part of the task defined under Paragraph 3.2.1.2, above, shall be used for the preparation of this document. To the extent that this data is incomplete, additional user interviews shall be conducted.

3.2.6.2 Implementation Plan

The Contractor shall provide an implementation plan for the Project Directors Board to follow in the phased build-out of the interoperability initiatives throughout the State. The plan shall provide the steps for:

(1) Migration to narrowband, (2) Migration to P25 conventional narrowband, (3) Site upgrades based on coverage, local needs, system needs, and microwave requirements, (4) microwave connectivity (5) Implementation of a Montana-wide hybrid system consisting of P25 trunked, P25 conventional and P25 analog simplex (state mutual aid frequencies) and (6) Field Unit Upgrade Strategy,.

3.2.6.3 Migration Plans

Following contract signing for the vendors providing equipment to the State, the Contractor shall work with those vendors in developing migration or transition plans for cut-over from old to new equipment or systems. The Contractor shall provide corresponding services to the regional interoperability projects, as directed by the Project Directors Board.

3.2.6.4 Local/Regional Interconnect Plans

The Contractor shall provide a plan for the interconnection of local/regional systems. The plan shall be based on the technical architecture of Paragraph 3.2.2 and the technical requirements of Paragraph 3.2.3. Examples of interconnects are those necessary for the sharing of radio infrastructure resources among regions and access to the data bases of other regions or the State.

3.2.6.5 Interoperability Solutions

The Contractor shall provide a plan for the implementation of the interoperability solutions developed in response to Paragraph 3.2.2.5, above. The plan shall describe the particular application of each interoperability solution (e.g., combination of organizations to be supported for what operations) and the process to implement the solutions. For those solutions subject to a vendor bidding process, the plan shall be generic to the general class of solution (i.e., vendor independent). Where alternative vendor products have the potential to provide the desired interoperability capability, the Contractor shall identify procurement options available to the Project Directors Board, make recommendations, and where necessary prepare and administer Request For Proposals (RFPs) and facilitate contract negotiations on behalf of the Project Directors Board.

3.2.6.6 Program Management Tools

The Contractor shall assist the Project Directors Board in developing and implementing program-tracking mechanisms including status and budget information.

3.2.6.7 System Management Plan

The Contractor shall prepare a System Management Plan consistent with the management architecture developed in accordance with Paragraph 3.2.2.5, above.

3.2.7 ACT AS FOCAL POINT FOR PARTICIPATING ORGANIZATIONS

3.2.7.1 Coordinate and Hold Local, Regional, and State Level Meetings

The Contractor shall work with Federal, State, Tribal and local personnel to assist in building user consensus and support. This shall include conducting meetings with the stakeholders, users and technical personnel as necessary. At the Project Directors Board's discretion, the Contractor shall also interface with legislators.

The Contractor shall strategize with the Project Directors Board's Project Manager and develop materials to promote the program.

3.2.7.2 Assist Project Directors Board in Resolving Issues Among Participants

The Contractor shall assist the Project Directors Board in resolving issues among the participants in the Montana-wide Interoperability Initiative. This shall include offering informal advice or conducting technical research.

3.2.7.3 Recommendations for Sharing of Assets

The Contractor shall provide recommendations for the sharing of assets for the benefit of the localities, regions, and the Project Directors Board. The sharing of assets with Federal agencies shall also be considered. These recommendations shall be based on the Technical Architecture of Paragraph 3.2.2, above, and the Contractors experience.

3.2.7.4 Coordinate with Montana SIEC

As discussed in Paragraph 1.2, above, the Montana SIEC provides direction for the resolution of matters related to public safety communication interoperability. A close working relationship between the Project Directors Board, the Montana SIEC, the PSSB, and the Contractor is essential to the success of the Montana-wide Interoperability Initiative. Therefore, the Contractor shall maintain liaison with the SIEC and PSSB including familiarity with the plans issued by the SIEC and, as required, attend SIEC meetings and make presentations to the SIEC on behalf of the Project Directors Board.

3.2.7.5 Coordinate with Participating Federal Agencies

To the extent that Federal agencies elect to participate with the Project Directors Board in the planning, implementation, and operation of the Montana-wide Interoperability Initiative, the Contractor shall work with these agencies for the mutual benefit of the State and Federal agencies.

3.2.7.6 Assist Project Directors Board with Vendor Interaction

The Contractor shall conduct meetings with potential contractors and facilitate on behalf of the Project Directors Board in contract negotiations.

3.2.7.7 Assist Project Directors Board with Design Reviews

The Contractor shall assist the Project Directors Board in conducting and evaluating vendor design reviews. This is in addition to the reviews presented by the Contractor in accordance with Paragraphs 3.2.2.7.

3.2.8 FUNDING SOURCES AND GRANT COMPLIANCE

The Contractor shall work with Project Directors Board and local personnel in acquiring additional funding including: (1) research and development of new funding streams and (2) developing supporting documentation for new grants and ensuring compliance with existing grants. This shall include assistance in the preparation of grant filing documents.

3.3 SUPPORT MONTANA-WIDE INTEGRATION

The Contractor may continue to support the Project Directors Board by providing the services specified below. These services would be applicable to the Project Directors Board's role in the integration of the Montana-wide Interoperability Initiative. These services can be provided to the localities and regions through contract change order.

3.3.1 CONTINUED SUPPORT THROUGH IMPLEMENTATION PHASES

The Contractor may provide follow-up to the support to the tasks during the phased build-out of the Montana-wide Interoperability Initiative through each of the participating consortia.

3.3.2 SUPPORT PLANNING AND IMPLEMENTATION OF SOLUTIONS

The Contractor may provide support to the localities, regions, and the Project Directors Board for ongoing planning and implementation of solutions pertaining to the Montana-wide Interoperability Initiative.

3.3.3 ACT AS AGENT FOR THE PROJECT DIRECTORS BOARD

The Contractor may act as agent for the Project Directors Board in working with the localities for the promotion, planning, and implementation relating to the Montana-wide Interoperability Initiative. This does not restrict the Project Directors Board from acting on their own behalf, as desired.

3.3.4 DEVELOP SUBCONTRACTS AND MANAGE SUBCONTRACTORS

The Contractor may facilitate on behalf of the Project Directors Board the preparation and negotiation of subcontracts for the Montana-wide Interoperability Initiative. The Contractors emphasis in developing and negotiating these subcontracts shall be on the Statement of Work. The contract terms and conditions would be primarily addressed by the Project Directors Board with support from the Contractor.

The Contractor may perform tracking of subcontractor progress relative to budget expenditures.

3.3.5 QUALITY REVIEW OF SUBCONTRACTOR WORK

The Contractor may perform quality review of subcontractor work. This will include participation in subcontractor status meetings and

design reviews as well as review and assessment of subcontractor deliverables. The Contractor may observe subcontractor equipment installations (where applicable) and inspect the quality of work. The Contractor may also oversee acceptance testing of subcontract as specified in Paragraph 3.3.6, below.

3.3.6 OVERSEE ACCEPTANCE TESTING

The Contractor may support the localities, regions, and the Project Directors Board in managing and overseeing Independent Validation and Verification (IV&V) of both vendor and system performance. This support shall include review (but not preparation) of test plans and procedures and participation in selected acceptance tests.

3.3.7 FREQUENCY ANALYSIS, IDENTIFICATION, COORDINATION AND LICENSING

The Contractor may provide either directly, or though subcontracted services, frequency analysis, identification, coordination and licensing of all frequencies required to support the design of the Montana-wide trunked hybrid system. A standardized frequency plan for interoperability Montana-wide. The Contractor would work closely with the Project Directors Board, Coordination committee, consortia technical teams, and PSSB.

3.3.8 OTHER TASKS

Other services not identified above, that the Project Directors Board may find useful during the course of the project. If these services are available from the Contractor, the Contractor shall provide cost estimates and negotiate with the Project Directors Board.

4. COST

4.1 COST ESTIMATE

In developing the cost for project management of the interoperable initiative, we have employed several proven methodologies to arrive at the cost for completion of the project. The two approaches used are:

- **Project Plan Approach,** which estimates the project effort based on the tasks to be accomplished, task duration, and the number of staff required to complete the project within a given time frame.
- **Previous Projects Approach,** which compares this proposal with the numerous previous similar development efforts Northrop Grumman has successfully completed.

Northrop Grumman makes this proposal for the project management for the Montana-wide interoperable radio initiative time and materials effort. Travel will be billed to the Project Directors Board at actual cost.

The hours and costs given above are estimates only. Actual time worked will be billed, on a time-and-materials basis, for each resource as shown in the rate table below.

Description	Quantity	Rate	Total
Senior Project Management	256 hours	$150	$ 38,400
Project Management	2,403 hours	$140	$ 336,350
Systems Analysis	2,403 hours	$105	$ 252,263
Travel			$ 36,873
		Total Estimate	$ 663,886

Lewis and Clark County shall pay Northrop Grumman an amount not to exceed 663,886 dollars ($663,886) for the performance of all activities necessary for or incidental to the performance of work as set forth in this SOW. The estimated effort is 5,062 hours for the period December 1, 2005 through March 31, 2007.

4.2 COST ASSUMPTIONS

Project Scope
The project scope is assumed to be as specified in Section 3, *Project Scope*. If during the project, the Project Directors Board requests changes in the project scope, agreed-upon out-of-scope changes will be billed at the MIS time-and-materials rates.

Project Schedule
The project schedule assumes a kick-off scheduled for December 1, 2005. Any change in the kick-off date will result in a corresponding change to all phases of the implementation project. The project schedule also assumes that each phase will be started and completed within the time frames specified in the plan and that the Project Directors Board will provide timely response and resolution to Project Control Documents (Decision/Information Requests, Project Change Requests, Issue Reports, and Deliverable Acceptance Requests). Project Change Requests and cost increases may result if agreed-upon timelines and deadlines are not met.

Coordinated Activities
The project assumes the Montana-wide system is a collaborative effort between Northrop Grumman and the consortia. It's assumed that members of the consortiums will provide sufficient resources and respond in a timely fashion in order to accomplish those tasks inherent to the consortia.

Travel
The project assumes four (4) initial meetings at each of the locations listed below, followed by monthly meetings alternately at each location and utilizing the Army National Guard teleconferencing equipment.

WICC	- Missoula
15-90	- Butte
TIC	- Helena
CMICC	- Great Falls
NTIP	- Havre
SCMIC	- Bozeman
Big Sky 11	- Billings
ETIC	- Glendive

The project assumes the monthly Project Directors Board status meetings will be held in Helena, Montana. In the event that the status

meetings are held at other locations (for example, as stated in section 3.2.7.1), the cost associated with approved travel will be addressed through the Change Order Process.

Limitation of Liability
This rates quoted above assume that the Contractor's liability will be limited to the amount of the payments received to date, and in no case will the Contractor be liable for special, consequential or indirect damages.

Project Directors Board Technical Coordination Committee
The project assumes each consortia will have a technical team, as identified in section 3.2.2.6 and that one member from each consortia technical team will serve on the Project Directors Board Technical Coordination Committee.

Partnering Agencies
The project assumes that the State of Montana, Public Safety Services Bureau and DES will remain as an available resource to the project at the current level of participation and support. The project assumes the Montana Army National Guard teleconferencing equipment is available for remote meeting, subject to scheduling. The project assumes each consortium is able to commit one (1) resource to serve on a technical advisory committee.

Additional Needs Assessments
Needs assessments for Federal, State of Montana, and Other Entities as identified in Section 3.2.1.2 are limited to a review of existing needs assessments or what can be determined by no more than sixteen (16) hours of meetings with each agency. Travel time and expenses are not included in this SOW, and if approved by the Project Directors Board, will be addressed through the Change Order Process. It is assumed that a complete Needs Assessment and Requirements Analysis for each of the entities identified in Section 3.2.1.2 is outside the scope of this SOW.

Frequencies
The cost of frequency analysis, identification, coordination and licensing of all frequencies required to support the design of the Montana-wide trunked hybrid system are not included in this SOW.

Phased Approach
The project assumes an iterative approach to the analysis and design work in order to identify and begin frequency acquisition in a timely manner, and to leverage the 2006 construction season.

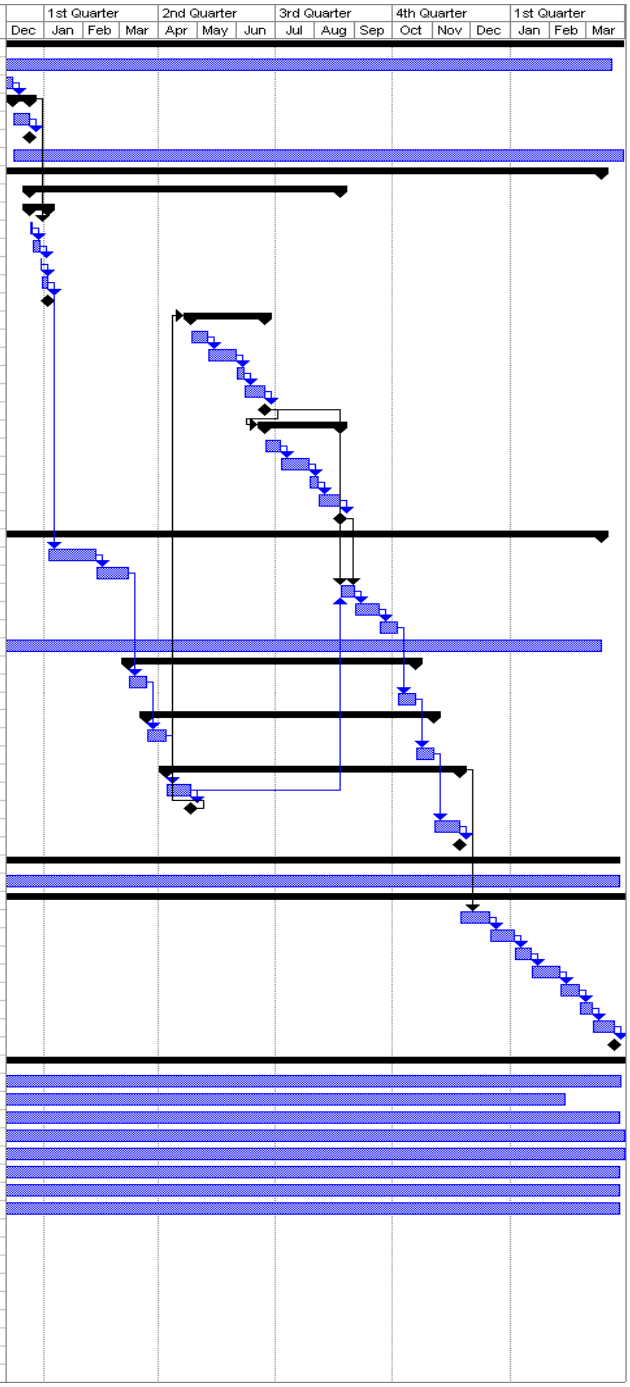
Deliverables
The project assumes twelve (12) printed and one hundred (100) electronic copies of all deliverables required by this SOW:

- Project Plan (Section 3.1.3.2)
- First Pass System Functional and Performance Requirements Document (Section 3.2.1.1.5)
- Second Pass System Functional and Performance Requirements Document (Section 3.2.1.2.5)
- Third Pass System Functional and Performance Requirements Document (Section 3.2.1.3.5)
- Preliminary Conceptual Design, Tech Requirements and Schedule (Section 3.2.4.2)
- Final Conceptual Design, Tech Requirements and Schedule (Section 3.2.4.4)
- Documentation and Project Plans (Section (Section 3.2.6.8)

5. IMPLEMENTATION WORK PLAN AND SCHEDULE

The following Gantt chart illustrates the tasks described in the previous section and the estimated time for completion of each task, based on the assumptions described in the previous section, *Cost Estimate*.

ID	WBS	Task Name
1	**3.1**	**3.1 Project Management and Plannng**
2	3.1.1	3.1.1 Project Management and Support
3	3.1.2	3.1.2 Define Project Objectives
4	**3.1.3**	**3.1.3 Develop Project Plan**
5	3.1.3.1	3.1.3.1 Develop Project Plan
6	**3.1.3.2**	**3.1.3.2 Deliver Project Plan**
7	3.1.4	3.1.4 Status Review
8	**3.2**	**3.2 Develop Statewide Vision**
9	**3.2.1**	**3.2.1 Needs and Requirements Analyses**
10	**3.2.1.1**	**3.2.1.1 First Pass Analysis**
11	3.2.1.1.1	3.2.1.1.1 Review Existing Needs Statements and Rqmts Analyses
12	3.2.1.1.2	3.2.1.1.2 Perform Additional Interviews and Analyses
13	3.2.1.1.3	3.2.1.1.3 Perform Rqmts Tradeoffs
14	3.2.1.1.4	3.2.1.1.4 Prepare System Functional and Performance Rqmts Doc
15	**3.2.1.1.5**	**3.2.1.1.5 Deliver First Pass System Functional and Performance Rqmts Document**
16	**3.2.1.2**	**3.2.1.2 Second Pass Analysis**
17	3.2.1.2.1	3.2.1.2.1 Review Existing Needs Statements and Rqmts Analyses
18	3.2.1.2.2	3.2.1.2.2 Perform Additional Interviews and Analyses
19	3.2.1.2.3	3.2.1.2.3 Perform Rqmts Tradeoffs
20	3.2.1.2.4	3.2.1.2.4 Prepare System Functional and Performance Rqmts Doc
21	**3.2.1.2.5**	**3.2.1.2.5 Deliver Second Pass System Functional and Performance Rqmts Document**
22	**3.2.1.3**	**3.2.1.2 Third Pass Analysis**
23	3.2.1.3.1	3.2.1.3.1 Review Existing Needs Statements and Rqmts Analyses
24	3.2.1.3.2	3.2.1.3.2 Perform Additional Interviews and Analyses
25	3.2.1.3.3	3.2.1.3.3 Perform Rqmts Tradeoffs
26	3.2.1.3.4	3.2.1.3.4 Prepare System Functional and Performance Rqmts Doc
27	**3.2.1.3.5**	**3.2.1.3.5 Deliver Third Pass System Functional and Performance Rqmts Document**
28	**3.2.2**	**3.2.2 Develop Technical Architecture**
29	3.2.2.1	3.2.2.1 Mobile Voice and Data Radio
30	3.2.2.2	3.2.2.2 Backhaul Network
31	3.2.2.3	3.2.2.3 Field Unit Deployment Stragegy
32	3.2.2.4	3.2.2.4 System Management
33	3.2.2.5	3.2.2.5 Radio System Interoperability
34	3.2.2.6	3.2.2.6 Coordination of Technical Issues
35	**3.2.2.7**	**3.2.2.7 Present Conceptual Design to State and Regional Consortia**
36	3.2.2.7.1	3.2.2.7.1 Present Preliminary Conceptual Design to State and Regional Consortia
37	3.2.2.7.3	3.2.2.7.3 Present Final Conceptual Design to State and Regional Consortia
38	**3.2.3**	**3.2.3 Develop Technical Rqmts**
39	3.2.3.1	3.2.3.1 Develop Preliminary Technical Rqmts
40	3.2.3.2	3.2.3.2 Develop Final Technical Rqmts
41	**3.2.4**	**3.2.4 Develop Schedules**
42	3.2.4.1	3.2.4.1 Develop Preliminary Schedules
43	**3.2.4.2**	**3.2.4.2 Deliver Preliminary Conceptual Design, Tech Rqmts and Schedule**
44	3.2.4.3	3.2.4.3 Develop Final Schedules
45	**3.2.4.4**	**3.2.4.4 Deliver Final Conceptual Design, Tech Rqmts and Schedule**
46	**3.2.5**	**3.2.5 Other Issues**
47	3.2.5.1	3.2.5.1 Operations and Maintenance Cost Management
48	**3.2.6**	**3.2.6 Develop Documentation and Project Plans**
49	3.2.6.1	3.2.6.1 Concept of Operations (CONOPs)
50	3.2.6.2	3.2.6.2 Implementation Plan
51	3.2.6.3	3.2.6.3 Migration Plans
52	3.2.6.4	3.2.6.4 Local/Regional Interconnect Plans
53	3.2.6.5	3.2.6.5 Interoperability Solutions
54	3.2.6.6	3.2.6.6 Program Management Tools
55	3.2.6.7	3.2.6.7 System Management Plan
56	**3.2.6.8**	**3.2.6.8 Deliver Documentation and Project Plans**
57	**3.2.7**	**3.2.7 Act as Focal Point for Participating Organizations**
58	3.2.7.1	3.2.7.1 Coordinate and Hold Local, Regional, and State Level Mtgs
59	3.2.7.2	3.2.7.2 Assist Project Directors Board in Resolving Issues Among Participants
60	3.2.7.3	3.2.7.3 Recommendations for Sharing of Assets
61	3.2.7.4	3.2.7.4 Coordinate with Montana SEIC
62	3.2.7.5	3.2.7.5 Coordinate with Participating Federal Agencies
63	3.2.7.6	3.2.7.6 Assist State with Vendor Interaction
64	3.2.7.7	3.2.7.7 Assist Project Directors Board with Design Reviews
65	3.2.8	3.2.8 Identification of Funding Sources and Grant Writing
66	**3.3**	**3.3 Support Montana-wide Integration**
67	3.3.1	3.3.1 Continued Support Through Implementation Phases
68	3.3.2	3.3.2 Support Planning and Implementation of Solutions
69	3.3.3	3.3.3 Act as Agent for Project Directors Board
70	3.3.4	3.3.4 Develop Subcontracts and Manage Subcontractors
71	3.3.5	3.3.5 Quality Review of Subcontractor Work
72	3.3.6	3.3.6 Oversee Acceptance Testing
73	3.3.7	3.3.7 Frequency Analysis, Identification, Coordination and Licensing
74	3.3.8	3.3.8 Other Tasks



Execution/Signature Block

In Witness Whereof, the parties hereto, having read this SOW in its entirety, do agree thereto in each and every particular.

Approved:

_____
Signature

Ed Tinsley
Chairperson
Lewis & Clark County Commissioners

_____
Date

Approved:

_____
Signature

Jim Arndell
Senior Manager
Northrop Grumman Corporation

_____
Date

ATTEST:

_____
Signature
Paulette DeHart
Clerk of Court

_____
Date